Remarks/Arguments

Applicants have received and carefully reviewed the Office Action of the Examiner mailed July 27, 2005. New claims 42 and 43 have been added. Support for the new claims is found in the specification, claims, and drawings as originally filed. No new matter has been added. Claims 1-43 are pending. Reconsideration and reexamination are respectfully requested.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 17, 20, 23, 32, 33, and 37-41 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Rejection under 35 U.S.C. § 103

Paragraph #2 of the Office Action states that claims 1-41 are rejected as being unpatentable over Diaz (US 5,992,094) in view of Conrad et al. (US 5,465,115). However, in view of the Examiner's statement that claims 17, 20, 23, 32, 33, and 37-41 would be allowable if rewritten in independent form, it appears that only claims 1-16, 18, 19, 21, 22, 24-31, and 34-36 are rejected, as is stated on the PTOL-326 form.

The Examiner asserts that Diaz discloses monitoring at least a portion of the interior region of the area of interest for the object after the object breaches the border. The Examiner acknowledges that Diaz does not disclose monitoring at least a portion of the border region of the area of interest for breach by an object. Conrad et al. is cited for teaching this feature. The Examiner asserts that it would have been obvious to one of ordinary skill in the art to incorporate the teaching of Conrad et al. image object monitoring process to Diaz's access control system to monitor the people entering and exiting a traffic zone such as the entrance to the department store. Applicants respectfully traverse the rejection.

Independent claim 1 recites a method for monitoring an area of interest having a border region and interior region, and includes the steps of:

monitoring at least a portion of the border region of the area of interest for breach by an object; and

monitoring at least a portion of the interior region of the area of interest for the object after the object breaches the border.

(emphasis added). Diaz appears to teach an entrance chamber metal detector system in which a security video recorder is not activated to monitor the area unless the metal detector is activated/alarmed. When the metal detector is activated, the video recorder is turned on and records the person for 15 seconds. See column 18, lines 8-20 and FIG. 8i.

It appears the Examiner may be considering the metal detector of Diaz as the border region and the entrance chamber as the interior region of the area of interest. If this is the case, Diaz still does not appear to teach the elements of the claim. If the step in Diaz of detecting a metal object by the metal detector is considered to be a step of monitoring at least a portion of the border region of the area of interest for breach by an object, Diaz does not appear to teach or suggest the second claimed method step of monitoring at least a portion of the interior region of the area of interest for the object after the object breaches the border. If one considers a gun as "the object", once the gun is detected by the metal detector and the person carrying the gun passes through the metal detector, the gun is no longer "monitored". Diaz teach using a camera and video recorder to capture and record images of the person carrying the gun. Diaz appears to teach monitoring the chamber for the presence of a metal object, and then recording images of the person carrying the metal object. The item monitored by Diaz changes from the gun or other metal object when the person is in the metal detector, to the actual person once the person passes through the metal detector. Diaz does not appear to teach monitoring at least a portion of a border region for breach by an object, and then monitoring the interior region of the area of interest for that object after the object breaches the border, as is recited in claim 1.

Conrad et al. do not appear to teach what Diaz lacks. Conrad et al. appears to teach using a video monitor to detect people traversing a traffic zone. Conrad et al. teach "processor 16 only analyzes portions of the image forming a window across the image of the traffic zone 8 rather than the entire image." See column 4, lines 32-34. Conrad et al. teach "the processor of the present invention only analyzes a limited area or window

substantially across at least that portion of the image representing the traffic zone rather than analyzing the entire image." See column 3, lines 4-7. Referring to FIG. 3, Conrad et al. teach "the image 30 represents substantially the entire traffic zone 8, and window 32 is shown as being entirely across the image 30 representing substantially the entire traffic zone 8." See column 5, lines 8-12 and FIG. 3. Conrad et al. thus appear to teach using a video camera to capture an image of an entire traffic zone, but only analyzing a narrow band extending across the entire zone, in order to detect people crossing the traffic zone. Conrad et al. do not appear to teach or suggest monitoring a portion of a border region for breach by an object, and then monitoring a portion of the interior region of the area of interest after the object breaches the border, as is recited in independent claim 1.

Applicants submit that there is no motivation or suggestion for one of ordinary skill in the art to combine the teachings of Diaz and Conrad et al., and that even if one were to make such a combination, one would not arrive at the claimed method. If one were to incorporate the image monitoring process of Conrad et al. into Diaz's access control system, the result would appear to be the system of Diaz in which a video camera is turned on when the metal detector is activated and an image of the entire entry zone is captured, but only a window of that zone is analyzed for the presence of a person or people. Neither Diaz nor Conrad et al. appear to teach or suggest monitoring a portion of a border region of the area of interest for breach by an object, and then monitoring at least a portion of the interior of the region of interest for that object after the object breaches the border. Thus, neither Diaz nor Conrad et al., nor a combination of the references appears to teach or suggest the method of claim 1.

The Examiner asserts that, with respect to claim 2, Diaz teaches ceasing monitoring the interior region of interest after the object leaves and continuing monitoring at least a portion of the border region after the object leaves the area of interest. The Examiner also asserts that claim 2 broadly reads on detecting the chamber area. Applicants respectfully traverse the rejection. Diaz teaches "a closed circuit TV system may work in conjunction with the ACCSS to provide a record of people that activate the metal detector 60. The camera system... may include a camera 230 installed at the entrance chamber 12, a time lapse security video recorder 232, and a monitor 234."

See column 17, line 62 through column 18, line 1. Diaz also teaches that when the metal detector is activated or alarmed, it sends a signal to the control panel which sends a signal to activate the time lapse security video recorder for 15 seconds, but if no metal is detected, the video recorder does not make a recording. See column 18, lines 12-19. Diaz thus does not appear to teach the method recited in claim 2.

Claim 3 recites a method in which the interior region of the area of interest is not monitored until the object no longer breaches the border region of the area of interest. Diaz does not appear to teach or suggest such method step. The Examiner points to column 5, lines 1-20 of Diaz for teaching such a step. Applicants do not understand this part of the rejection because the cited section of Diaz explains why a person in a wheelchair requires a wider door opening. Similarly, Applicants do not understand the Examiner's reliance on column 6, lines 19-30 for teaching the method step of claim 4, "continuing to monitor at least a portion of the border region of the area of interest while the interior region is being monitored." The portion of Diaz referred to by the Examiner describes providing inert gas in floor contact pads to avoid rusting, providing a seismic detector in order to unlock all doors in the event of an earthquake or bomb explosion, providing a bullet-resistant covering over the locks so a bullet will not disable the lock, and providing a 24 volt dc battery backup. These teachings of Diaz do not appear to be relevant to the method step of claim 4.

Claim 5 recites the method step of providing a safety output when the border region is breached by the object. The Examiner asserts that Diaz teaches this method step, citing column 10, lines 48-55 for the teaching. This portion of Diaz, however, describes the toggle switches for the doors and states that the control panel may have a door release button to release door No. 2 if the metal detector is activated. It is unclear how these teachings of Diaz anticipate the method step recited in claim 5.

The Examiner points to column 10, lines 41-56 of Diaz for teaching the step of a safety output disabling a piece of equipment in the area of interest, recited in claim 6. This passage of Diaz, however, describes the control panel having multiple alarm features and door toggle switches to control the four doors of the chambers. Diaz does not appear to teach or suggest a step of having a safety output disable a piece of equipment in the area of interest, as is recited in claim 6.

The Examiner points to column 18, lines 8-20 of Diaz for teaching the safety output sounds an alarm, recited in claim 7. This portion of Diaz, however, teaches that when a person enters the entrance chamber and sets off the metal detector, the control panel sends a signal to activate the security video recorder for 15 seconds and records the person. Diaz does not appear to teach or suggest a method step of a safety output sounding an alarm, as is recited in claim 7.

Regarding claims 8 and 9, the Examiner points to Diaz at FIG. 1, item 8, and column 4, lines 33-38, respectively, for teaching the claim elements. This rejection is not understood because Diaz does not appear to recite a reference number 8, in FIG. 1 or any other figure, and column 4, lines 33-38 describe a prior art reference device that can unlock all doors in case of a fire, and a wireless remote control unit used to change the operating mode of a security chamber. This portion of Diaz does not appear to teach or suggest a border region comprising an interrupted region, as is recited in claim 9.

Claim 10 recites a method in which the area of interest excludes a defined region from its interior. The Examiner points to column 6, lines 10-14 of Diaz for teaching this step. Applicants do not understand this rejection because the cited portion of Diaz teaches that providing a three-second time delay between the time a person first touches the second door until the magnetic lock is re-locked overcomes the required extra 12 inches of width in the passageway leading to the door required by codes for wheelchair access. This portion of Diaz does not appear to be relevant to the method step recited in claim 10.

The Examiner states that claim 11 is similarly analyzed and rejected the same as claim 1. Independent claim 11, however, recites method steps distinct from those of claim 1. Claim 11 recites the method steps of:

> capturing a capture image of the area of interest;
> identifying one or more border regions in the captured image that correspond to the border of the area of interest;
> analyzing the one or more border regions of the captured image and determining if an object has entered the one or more border regions of the area of interest; and
> outputting a signal indicating when an object has entered the one or more border regions of the area of interest.

Neither Diaz nor Conrad et al. nor a combination thereof appears to teach or suggest the method steps of claim 11. In particular, neither reference appears to teach capturing an image and then identifying one or more border regions in the captured image corresponding to the border of the area of interest. Also, neither reference appears to teach analyzing the one or more border regions of the captured image and determining if an object has entered the one or more border regions of the area of interest. In fact, according to the Examiner's interpretation, Diaz uses a metal detector to determine if an object enters a border region, which teaches away from capturing an image of the area of interest, identifying one or more border regions in the captured image corresponding to the border of the area of interest, and analyzing the border regions of the captured image and determining if an object has entered one of the border regions, as is recited in the claim. Similarly, Diaz appears to teach away from the method steps recited in independent claims 24 and 28.

Regarding claims 12, 13, 15, and 16, the Examiner asserts that Diaz discloses one or more border region including a reference marking. Applicants have carefully reviewed the Diaz reference, including column 2, lines 35-39, cited by the Examiner, and it does not appear Diaz provides such a teaching. The Examiner asserts that a reference marking broadly reads on the entrance of the store or shopping mall. It appears the Examiner is referring to the Conrad et al. reference. However, the traffic zone 8 viewed by the video camera in Conrad et al. does not appear to include the store entrance. See FIGS. 1 and 2.

Claims 14 and 22 recite the method step of comparing the one or more border regions of the capture image to one or more corresponding regions of a reference image. The Examiner asserts that Diaz teaches such a method step, and points to column 17, lines 41-59 for support. Applicants have carefully reviewed the Diaz patent and have found no such teaching. The portion of Diaz referenced by the Examiner describes the electronic connections of the system but does not appear to teach comparing border regions of a capture image to corresponding regions of a reference image, as is recited in the claims.

The Examiner cites column 4, lines 39-54 of Diaz as disclosing the steps of storing the capture image when an object has entered the area of interest and viewing the

stored capture images at a later time, as is recited in claims 18 and 19. However, this section of Diaz describes prior art devices preventing robbers from evading or tricking a completely electronically controlled system, systems operating on various high and low voltage power sources, and the disadvantage of systems with metal doors causing a metal detector to give false readings. The cited portion of Diaz does not appear to teach the method steps recited in claims 18 and 19.

Claim 21 recites taking the reference image at a set time interval. The Examiner points to column 10, lines 48-67 for such a teaching, however, this portion of Diaz actually teaches the operation of the door toggle switches, door release buttons, and a wireless transmitter and receiver for releasing the doors. Diaz does not appear to teach the elements of claim 21.

The Examiner asserts that Diaz teaches, at column 4, lines 44-61, at least one comparison detects relatively immediate changes, and at least one comparison detects accumulated changes, as is recited in claim 23. The cited portion of Diaz, however, appears to describes prior art devices preventing robbers from evading or tricking a completely electronically controlled system, systems operating on various high and low voltage power sources, the disadvantage of systems with metal doors causing a metal detector to give false readings, and the disadvantage of using glass side walls framed by metal, which creates a closed electrical loop around the glass that can interfere with the metal detector. Diaz does not appear to teach the elements of claim 23.

The Examiner states that claims 24 and 26 are similarly analyzed and rejected the same as claim 1. Neither Diaz nor Conrad et al. nor a combination thereof appears to teach or suggest the method steps of claims 24 and 26. Independent claim 24 and the claims dependent thereon recite the method steps of capturing at least two images of the area of interest using two separate image capturing devices, identifying one or more border regions in the captured images that correspond to the border of the area of interest, analyzing the one or more border regions of the captured images to determine when an object enters the area of interest, and outputting a signal indicating whether or not an object has entered the area of interest. Diaz does not appear to teach such method steps. In particular, Diaz does not appear to teach capturing at least two images of the area of interest using two separate image capturing devices, as is recited in independent claim 24.

Conrad et al. do not appear to teach the elements of the claims, thus the combination also appears to fail to teach the elements of the independent claim, or the claims dependent thereon.

The Examiner states that claims 27, 28, 30, 31, and 36 are similarly analyzed and rejected the same as claims 1-9. Neither Diaz nor Conrad et al. nor a combination thereof appears to teach or suggest the method steps of claims 27, 28, 30, 31, and 36. In particular, independent claim 27 recites a system for monitoring an area of interest having a border and an interior region, comprising capturing means for capturing a capture image of the area of interest, and monitoring means for monitoring at least a portion of the border region of the area of interest for breach by an object, and for monitoring at least a portion of the interior region of the area of interest for the presence of the object after the object breaches the border. As discussed above with respect to claim 1, neither Diaz nor Conrad et al. appear to have monitoring means for monitoring a border region, and then an interior region after the border region has been breached, as is recited in the claim.

Independent claim 28 and claims 29-30 dependent thereon recite a system having an image capturing means, first and second processing means for processing at least one capture image to determine if an object has entered the area of interest, and output means for outputting a signal indicating that an object has entered the area of interest when both the first processing means and second processing indicate that an object has entered the object of interest. Diaz appears to have one processing means for processing the capture image of the entire area of interest in order to view the person who set off the metal detector. Diaz does not appear to teach or suggest using two processing means or outputting a signal indicating the presence of an object when both processing means indicate the presence of an object. Conrad et al. do not appear to teach such elements, thus the combination of Diaz and Conrad et al. also appears to fail to teach the elements of the claims.

Independent claim 31 recites a method in which at least a portion of the border region of the area of interest is monitored for breach by an object having a first minimum size, and at least a portion of the interior region of the area of interest is monitored for an object having a second minimum size after the object breaches the border region of the

area of interest. The Examiner did not specifically address claim 31. Applicants submit that neither Diaz nor Conrad et al. appear to teach or suggest the specific method steps of claim 31.

With regard to dependent claims 34 and 35, the Examiner asserts that Diaz discloses the interior region being defined to include the border region, citing Fig. 1, item 10, and also discloses the interior region is defined to exclude the border region, again citing Fig. 1, item 10. Applicants submit that this portion of Diaz does not teach or suggest the elements of claims 34 or 35. Diaz does not appear to teach or suggest an area of interest having both a border region and an interior region, as is recited in the claims.

Independent claim 36 recites a method for monitoring an area of interest having two or more regions, in which each region has a border and an interior region. The method involves capturing a capture image of the area of interest, monitoring the border and/or interior region of a first region of the area of interest for breach by an object, and monitoring the border and/or interior region of a second region of the area of interest for breach by an object. The Examiner did not separately address claim 36. Neither Diaz nor Conrad et al. appear to teach or suggest such method steps.

Diaz does not appear to teach or suggest the elements of the claims. Conrad et al. do not provide what Diaz lacks, therefore a combination of Diaz and Conrad et al. also fails to teach or suggest the elements of the claims. Withdrawal of the rejection is respectfully requested.

Reconsideration and reexamination are respectfully requested. It is submitted that, in light of the above remarks, all pending claims 1-43 are now in condition for allowance. If a telephone interview would be of assistance, please contact the undersigned attorney at 612-359-9348.

Respectfully Submitted,

Date: October 17, 2005

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